

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: November 5, 2001, 12:58:32 ; Search time 65.26 Seconds
(without alignments)
342.787 Million cell updates/sec

Title: US-09-593-316-2
Perfect score: 2003
Sequence: 1 MNVKGKVVILSMIVVSTIVV.....IKLVKMSWQTKENVVNNV 369

Scoring table:
BLASTSUM62
Gapop 10.0 , Gapext 0.5

Searched: 412676 seqs, 60623988 residues
Total number of hits satisfying chosen parameters: 412676

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

1: /cgnl_9/gcadata/geneseq/geneseq/AA1980.DAT:*
2: /cgnl_9/gcadata/geneseq/geneseq/AA1982.DAT:*
3: /cgnl_9/gcadata/geneseq/geneseq/AA1982.DAT:*
4: /cgnl_9/gcadata/geneseq/geneseq/AA1984.DAT:*
5: /cgnl_9/gcadata/geneseq/geneseq/AA1984.DAT:*
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10: /cgnl_9/gcadata/geneseq/geneseq/AA1989.DAT:*
11: /cgnl_9/gcadata/geneseq/geneseq/AA1990.DAT:*
12: /cgnl_9/gcadata/geneseq/geneseq/AA1991.DAT:*
13: /cgnl_9/gcadata/geneseq/geneseq/AA1992.DAT:*
14: /cgnl_9/gcadata/geneseq/geneseq/AA1993.DAT:*
15: /cgnl_9/gcadata/geneseq/geneseq/AA1994.DAT:*
16: /cgnl_9/gcadata/geneseq/geneseq/AA1995.DAT:*
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18: /cgnl_9/gcadata/geneseq/geneseq/AA1997.DAT:*
19: /cgnl_9/gcadata/geneseq/geneseq/AA1998.DAT:*
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21: /cgnl_9/gcadata/geneseq/geneseq/AA2000.DAT:*
22: /cgnl_9/gcadata/geneseq/geneseq/AA2001.DAT:*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	length DB	ID	Description
1	1711.5	85.4	376	16	Marmoset alpha-1,3
2	1705	85.1	375	19	Porcine alpha-1,3
3	1701	84.9	371	16	Porcine alpha (1,3
4	1694	84.6	371	16	Pig alpha-1,3-gala
5	1642	82.0	359	15	AAK62508
6	1642	82.0	359	17	AAK90573
7	1640	81.9	363	19	AAW4687
8	1591.5	79.5	354	19	AAW49688
9	1530.5	76.4	342	19	AAW49689
10	1471	73.4	394	12	AAK13750
11	1471	73.4	394	15	AAK45935

12	1471	73.4	394	18	AAW13639
13	1315	65.7	313	15	AAK62507
14	673	33.6	375	15	AAK57021
15	671	33.5	353	12	AAK11417
16	671	33.5	353	15	AAK57011
17	670	33.4	354	12	AAK11789
18	670	33.4	354	12	AAK11790
19	670	33.4	354	12	AAK11792
20	670	33.4	354	15	AAK57020
21	656	32.8	358	15	AAK57014
22	654	32.7	354	15	AAK57013
23	654	32.7	354	15	AAK57016
24	486	24.3	195	15	AAK57024
25	283.5	14.2	100	20	AAK56039
26	278.5	13.9	106	21	AAK6491
27	264	13.2	154	15	AAK57025
28	236.5	11.8	90	21	AAK66323
29	236.5	11.8	90	21	AAK66323
30	236.5	11.8	90	21	AAK66489
31	99.5	5.0	703	22	AAK70687
32	99.5	5.0	722	22	AAK70686
33	94.5	4.7	563	20	AAW9800
34	94	4.7	293	21	AAK75347
35	93	4.6	291	22	AAK60656
36	92	4.6	293	21	AAK75339
37	89.5	4.5	855	21	AAK52003
38	89.5	4.5	855	21	AAK51632
39	88	4.4	587	21	AAK42403
40	88	4.4	624	21	AAK42402
41	88	4.4	654	21	AAK42401
42	87	4.3	393	21	AAK5474
43	87	4.3	571	22	AAK11764
44	85.5	4.3	258	17	AAK5775
45	85.5	4.3	708	20	AAK6547

ALIGNMENTS

RESULT 1
ID AAR80016
AAR80016 standard; Protein: 376 AA.
XX
AC AAR80016:
XX
DT 01 MAY-1996 (first entry)
XX
DE Marmoset alpha-1,3-galactosyltransferase.
XX
KW Marmoset; alpha-1,3-galactosyltransferase; immune response; glycoprotein;
KW alpha-galactosyl epitope; cell membrane; virus; phagocytosis; tumour;
KW antigen processing; leukemia; lymphoma; melanoma; carcinoma;
KW sarcoma; vaccine; opsonisation; glycoprotein; antibody; anti-Gal.
XX
OS Callithrix jacchus.
XX
PN W09524924-A1.
XX
PD 21-SEP-1995.
XX
PE 13-MAR-1995; 95WO-US03156.
XX
PR 15-MAR-1994; 94US-0213200.
XX
PA (UYHA-) UNIV HAHNEMANN & MEDICAL COLLEGE PENNSYL.
XX
PI Gal11 U, Repik pm:
XX
DR WPI: 1995-336816/43.
XX
DR N-PSDB: AAT04522.
XX
PT Association of an alpha-galactosyl epitope with a tumour or viral
antigen - is administered to anti-Gal synthesising animals to induce

XX	transgenic swine; porcine alpha (1,3) galactosyltransferase;
KW	antisense; ribozyme; gal-alpha-1,3-Gal-beta-1-4GlcNAc; epitope;
KW	terminal; xenogenic; transplant; rejection; gene therapy; pig.
US	Sus scrofa.
XX	W09528412-A1.
XX	
XX	26-OCT-1995.
PD	
XX	31-MAR-1995; 95WO-0503940.
XX	
XX	13-APR-1994; 94US-0228933.
XX	
XX	(BIOT-) BIOTRANSPLANT INC.
PA	(GENO) GEN HOSPITAL CORP.
PA	(CHIL-) INST CHILD HEALTH.
XX	
P1	Baetscher MW, Gustafsson KT, Sachs DH;
XX	
XX	WPI: 1995-471759/48.
DR	N-PSDB: AAT02892.
XX	
PT	Novel transgenic alpha (1,3) galactosyltransferase negative swine
PT	- used to produce rejection resistant cells for xenogenic
P1	transplantation
XX	
XX	Claim 11: Pages 35-47; 56pp: English.
XX	
CC	Transgenic swine in which the normal expression of the alpha (1,3)
CC	galactosyltransferase (AGT) AAR85082 is prevented, are prep. by
CC	inhibiting the expression of the AGT gene AAT02892 using antisense
CC	oligonucleotides or ribozyme inactivators in a pluripotent porcine
CC	embryonic stem cell. It is then inserted into a porcine oocyte
CC	(from which the pronuclear material has been removed), which is
CC	itself grown to produce the transgenic swine. Swine which do not
CC	express AGT will not produce carbohydrate moieties contg. the
CC	distinctive terminal Gal-alpha-1,3-Gal-beta-1-4GlcNAc epitope,
CC	which is a significant factor in xenogenic (esp. human) transplanth
CC	rejection of swine grafts. Therefore the swine cells produced in
CC	the AGT negative transgenic swine are xenogenic transplant
CC	rejection resistant, and can therefore be used by a transplant
CC	recipient, or to provide gene therapy.
XX	
XX	Sequence 371 AA:

[illegible]

Dd 299 qeclkyllqdkendleadwhdslnlndytlilnkptkilspeycwdyhlqnsvdrjvklia 368
QY 357 WOTKEYNVVRNNV 369
II IIII : IIII :
Dd 359 wtkkeynlvrnni 371

RESULT	4
AAR76777	
ID	AAR76777 standard; Protein; 371 AA.
XX	
AC	AAR76777;
XX	
DT	11-DEC-1995 (first entry)

XX pig alpha-1,3-galactosyltransferase.
DE
XX Alpha-1,3-galactosyltransferase; alpha-1,4-GalT; transgenic animal
KW pig; hypochacte rejection; xenotransplantation; donor organ;
KW allograft rejection; gal epitope; gene disruption;
KW homologous recombination; knock-out.

AA		
OS	Sus scrofa.	
XX		
PN	MO9520661-A1.	
XX		
PD	03-AUG-1995.	
XX		
PF	27-JAN-1995;	95MO-IB00088

XX			
PR	26-JAN-1995;	9508-0188607	
FR	27-JAN-1994;	9405-0188607	
XX			
FA	(PRES-) BRESATEC LTD.		
PA	(SVIN-) ST VINCENT'S HOSPITAL		
XX			
PI	Crawford Rd, Dapice A/JF, I		
FI	Hobbs AJ;		
XX			
DR	WPI; 1995-275446/36.		
DR	N-PSDB: AA093077.		

XX **New alpha-1,3-galactosyltransferase and leukaemia inhibitor factor**
 XX **-corress. DNA and nucleic acid constructs for inactivating the**
 PT **transferrase gene; for eliminating hyperacute region in human**
 PT **transplants**
 XX
 PS **Claim 3; Fig.5; 184pp; English.**

XX cdNA encoding porcine alpha-1,3-GalT was generated from liver RNA
XX using primers based on conserved regions of the mouse and cattle alpha-
XX 1,3-GalT genes. Potential sites to interrupt the alpha-1,3-GalT gene
XX (via homologous recombination) were identified in exons 4, 7, 8 and 9.
XX Such inactivation allows the breeding of "knock-out" animals that
XX pigs suitable as donors of organs to overcome hyperacute rejection
XX problems in human xenotransplantation.

[illegible]


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XX AAR13750.
XX
XX 07-NOV-1991 (first entry)
XX
XX GDP-Fuc: [beta-D-Gal(1,4/1,3)]-D-GlcNAc(Glc)alpha(1,3/1,4)
DE -fucosyltransferase.
DE
XX Glycosyltransferase.
XX
XX Mus musculus.
XX
XX M09112340-A.
XX
XX 22-AUG-1991.
XX
XX 14-FEB-1991; 91MO-US008959.
XX
XX 12-DEC-1990; 900S-0627621.
PR 14-FEB-1990; 900S-0479658.
PR 14-FEB-1990; 900S-0480133.
XX
XX (UNM1 ) UNIV OF MICHIGAN.
XX
XX
XX Lowe JB;
XX
XX WP1: 1991-267151/36.
XX
XX N-PSDB; AAO13331.
XX
XX Isolation of gene conveying post-translational characteristic
PT e.g. the presence of soluble or membrane bound oligo or
PT polysaccharide or glycosyltransferase.
XX
XX Disclosure: Fig 2; 155pp; English.
XX
XX
XX The amino acid sequence codes for a protein capable of functioning
CC as a UDP-Gal:[beta-D-Gal(1,4)]-D-GlcNAc alpha (1,3)galacto-
CC syltransferase.. The products of this enzyme, sub-terminal alpha
CC (1,3) and alpha(1,4) fucose residues are used in the post-
CC transational modification of the oligosaccharides on cell surface.
CC Intracellular or secreted proteins or lipids. These can be used for
CC the prodn. of diagnostics and therapeutics. There is a single
CC transmembrane domain consisting of a 19 amino acid hydrophobic
CC segment flanked by basic residues and a large (presumably
CC catalytic) C-terminal domain that would ultimately be targeted to
CC the lumen of the Golgi. It has two potential N-glycosylation sites
CC indicating that as with other glycosyltransferases, it may be
CC synthesized as a glycoprotein. It is representative of a Type II
CC transmembrane protein. See also AAR13749-R13752.
XX
XX
XX Sequence 394 AA;
XX
XX
XX Query Match 73.4%; Score 1471; DB 12; Length 394;
XX Best local Similarity 71.5%; Pred. No. 2,1e-139;
XX Matches 266; Conservative 47; Mismatches 43; Indels 16; Gaps 3;
XX
XX 1 MNWKKVILSMIVSVTVFMFPIYHSDEGSLPFWNPSPNPVSGSGSSLOKQWMPPHWPN 60
XX 36 mnnvkkvilllmilvstlvvvlwveyy-----rrlprv-gentrqkdwlrpwwik 82
XX
XX 61 NG---VQEDEDVDPEKEDKEDKSKLSDMFNFPKRPVVTTMDWKAFAVWEGSYNRA 117
XX ||| : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
XX nqtsygedvnevgrecksgrndrlneqplwdfwpknprpdvltvrrpwkapivewgtydca 142
XX
XX 118 VLDDYYAAQKQITVGLITVAAGRYIEHYIEEELTSANKRHPVQKRVITFVWDVSRMLI 177
XX : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
XX : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
XX 143 llekyaqckltvqlltvavgkyiehyiledilesadmylmvqhrvlfymlddtsrmpv 202
XX
XX 178 ELGPIRSKVFVKERKMDVSWVRKMTLGHIAANIORVDFEFECMDVDVDFEDPCV 237
XX | | | : : : : : : : : : : : : : : : : : : : : : : : : : : :
XX 203 hlnphlsqvlvleirsekrtwgdtsmmtrmtlgchllahlnqhexdlfcmadvdytqanlqv 262

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QY 238 ELTGSVAQLOAMWTKALPDEFTYRKRESAAIIPFGSGDYTHAALFGATPTQVLAINTQ 247
DB 263 etllqqlvqlqawwykaspekflyerrelsaaylplgecdlyhnaatqatptlhlrlr 322
QY 268 ECPKCIETLKKNDITFAQWHDHSHLNKYPFLNKPRLSLNPFYCWQYHIGLPAVIRIKVMSW 357
DB 323 eetkrlldqkklhdiaaqphdeshlnkylfllnkpklslspeywdyqldqpslksvkvaw 482
QY 358 QTKENYNNVNNV 369
DB 383 qtkenylnrvnnv 394

RESULT 11
ID AAR45935
AA AAR45935 standard: Protein; 394 AA.
XX
AC AAR45935:
XX
DI 26-JUL-1994 (first entry)
XX
DE A glycosyltransferase.
XX
KM Glycosyltransferase; glucosyltransferase; GDP-Fuc; in vitro; cell;
KW surface; oligosaccharide.
XX
OS Homo sapiens.
XX
PN W09402616-A.
XX
PD 03-FEB-1994.
XX
PE 20-JUL-1993; 93MO-US06703.
XX
PR 20-JUL-1992; 92US-0614281.
XX
PA (UNMI ) UNIV MICHIGAN.
XX
PI Lowe JB;
XX
DR WPI: 1994-048874/06.
DR N-PSDB; AAO56907.
XX
PT DNA fragment encoding a glycosyltransferase - can be used for in
PT vitro reactions to modify cell surface oligosaccharide(s) e.g.
PT blood gp. determinants, to protect against transplant rejection
XX
PS Disclosure: Fig 2; 249pp; English.
XX
XX The sequence is that of a human glycosyl transferase. The enzyme
CC may be non glycosylated. This prevents premature loss of enzyme
CC activity. It can also be used in in vitro reactions to modify cell
CC surface oligosaccharide molts. e.g. blood group determinants.
CC See also AAR45933-9.
XX
SQ Sequence 394 AA:

Query Match 73.4%; Score 1471; DB 15; Length 394;
Best Local Similarity 71.5%; Pred. No. 2,1e-139;
Matches 266; Conservativity 47; Mismatches 43; Indels 16; Gaps
QY 1 MNVKKRVLISMIVSTVIVVEWYIHSPEGSLFWLNPSSNRPVSQSSLOKQWMPFPPFN 60
DB 36 mnvkkqrvlllmivstvvvvtwey-----nrlpev-qeotwgkdwipswtk 82
QY 61 NG---YOEDEDVDEKEQREKEDSKSLKLSQWFNPFRREVYATDQKAPVWEETYNRA 117
DB 83 ngthsygednvgvrrekarngdriceqqlwdvtofpknrlpdrvltpvkaprtwentydra 142
QY 118 VLDVVYAKOKITVGLTFEAVGNYIEHYILPEPLTSANKRHPVGVGHVLFYVMVQVDSRMPL 177
DB 143 llekyatqklvqlvliavqkyliehyiledilesadmylmvghrvllfvmtdtsrmpvv 202

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Gy		I 798 EFGHLEKSEKKVEEKPEERBMLQVSMVKRKTGHHVAHQREVLPCMDYGVQEDEFVC	247
Lb		1 1 1 - - - - : : : : : : : : : : : : : : : : : :	262
Gy		Z 38 EHLEFESAVOJADAWMYRKAPDDEFTYEERKESSAAVI PEEEGEPYYHAALPGGT PQGLINTU	297
Lb		264 GELPQLTVLQWGWYSKPSPKHIT YETTELISAYIPEDQTLYPHANIGPI PHILINLR	322
Gy		Z 98 FPKRGKLXOKKNOLFAOMIDSHLNKYPLNKRPTLLSPPCKMTHYLGPADIKLVMSMW	357
Lb		323 KSKKRLTPDKKHLDPQWDLSHNKYLINKPRKLTISPQCWDIYGIPSDLKSVKWVM	382
Gy		K5A QTEKENYVRNNV	469
Lb			494
RESULT	12		
ID	AAM16649 standard; Protein; 494 AA.		
AC	AAM16649;		
JT	19 JUN 1997 (first entry)		
Dc	Mutino alpha(1,4)-galactosyltransferase,		
Xx	Alpha(1,4)-galactosyltransferase; glycosylation; oligosaccharide,		
Xs	mus sp.,		
Cn	WP9709421 AL.		
Fq	13 MAR 1997.		
Pf	06 SEP-1996; 96MO US13BL6.		
Rg	08 SEP 1995; 95HS-05Z50+H.		
Vt	(UNREF) UNIV MICHIGAN.		
p1	Ingaolt Lal, Lowm JHg		
Dk	WPI: 1997_19Z897/17.		
Nr	N-TSIDBg AAT61676.		
XX	New recombinant fucosyltransferase proteins - useful for modifying		
Ej	cell surface oligosaccharide structures		
Ps	Example 2; Page 272-274; 42ppp; English.		
XX	Mutino Ddp-Gal-beta-D-gal(1,4)-D-cl-RNAc alpha(1,3)		
Cv	galactosyltransferase (AAM16649) catalyzes the a (transglycosylation		
Ec	reaction between ddp-gal and N-acetylgalactosamine and is associated		
Ce	with surface-localised expression of gal(alpha1-3)Gal linkages.		
Cd	The amino acid sequence was deduced from a cDNA clone (AAT61676)		
Cc	clad, by transfecting Cos-1 cells with cDNA derived from mouse F9		
Cv	tetrahedraloma cells, and screening the transfected cells for		
Cc	surface localised Gal(alpha1-3)Gal linkages. When expressed in		
Cc	animal cell lines, the enzyme provides specific capabilities with		
Cc	respect to post-translatonal modification of the oligosaccharides		
Cc	of expressed proteins or lipids. The enzyme can also be used to		
Cc	raise antibodies and to screen for inhibitor cpds.		
XX	Seroproteo 494 AAC:		
Energy Match	73.4%; Score 1471; DB 18; Length 494;		
Post Local Similarity	71.5% ; Prod.No.: Z-1-139;		
Matches Z66; Conservative	47; Mismatches 43; Indels 16; Gaps		
I MNAGAKVILLISMVVSTIVAIVEVDYIHDSFGSLPWNPINSHPNEVSQAASSIQKGHWPFRRWN	60		
Gy			

Db	36	muvaqkqlllmltvsitvvvtwgyv-----mfpvqgruwtgkwlpstwk	82
Qy	61	NC---YGEDELDWEKEQKREKSKLISDWEKPEKPEVVTMTQKAVVVEGITYNKA	117
Db	83	natlsygednveqfereqrngdtteeqplwddlnpkrpavlvtvpkqpfiveeqaydtq	142
Qy	118	VLADYVAKQKTLVGLITVFAYVARYEHLTEFEETISANHEHMGVAVFYVAVDVSMPPL	177
Db	143	lckyyatqkltvqlyvtfavkytehytcdttsmdnylmvqhtvtfymtdtstmpv	202
Qy	178	ELGELRSKPEVPEKRRKQVSVWRKTTGEHVAHOREVDTEPQMDVQVQDEHY	247
Db	204	hlnplhsqvtelrtsekrwqdismmrnktlgehltdhlgqvdtlcmddvqtlqndt	262
Qy	248	ETLDGSHVQADAMWYKADPDEFTYERKRESAAVLPGEKGFYVHAALPGSTPQVNLTY	297
Db	263	etlqlvtvqlyqawwykaspoktlyerctlsaylprqgdtlypbaatlqdtphlhltr	322
Qy	298	EFGKGLTKDKRNDLEADQMDHSHLNKTFELLNKPTKLTSEFYCMYTHGLDADIKYKMSW	357
Db	323	ectkqllqdkkhdteagqhdeshlnkytltmkpkltspycwddqyqlpsdtkskvaw	382
Qy	358	QTKRYNRYKNNV	469
Db	383	qtkrynlvrnnv	394
RESULT 13			
AAK62507			
Db	AAK62507	standard; Protein: 313 AA.	
AC	AAK62507:		
XX	DDF	26-JUN-1995	(first entry)
XX	DE	galactosyl transferase 3' clone product.	
XX	KW	Gal alpha (1-3) galactosyl transferase; xenotrans; Transplant;	
KM	XX	rejection.	
XX	OS	Sus scrofa domestica.	
XX	PN	W09421799-A.	
XX	PD	29 SEP-1994.	
XX	PF	15-MAR-1994; 94W0 A000126.	
XX	PR	16-MAR-1994; 94AD-0007854.	
XX	PA	(AUST-) AUSTIN RES. INST.	
XX	PI	McKenzie IFC, Sandrin MS;	
XX	DR	WPI: 1994-4170197/9.	
XX	DR	N-PSDB: AA074711.	
XX	PT	DNA sequences encoding Gal-alpha (1-3)galactosyl transferase	
XX	PT	and clones contg. such sequences are used in xenotrans. therapies	
XX	PS	Disclosures: Page 41; 50pp; English.	
XX	CC	The sequence is that of the product of the porcine Gal alpha (1-3)	
XX	CC	galactosyl transferase gene which produces a Gal epitope on the	
XX	CC	surface of porcine cells. This epitope is recognised by antibodies	
XX	CC	which are responsible for hyperacute rejection of xenotransplanted	
XX	CC	pig cells, tissues and organs.	
XX	CC	See also AAK62508.	
XX	Sequence	313 AA:	

